

**ABSTRACT**

The present invention relates to an antenna device for transmitting and receiving electromagnetic waves. In an illustrative embodiment, an antenna device includes a transmitter section and a receiver section. The receiver section includes a receiving antenna structure selectively switchable between a plurality of configuration states. The antenna structure may be switched by a switching device, which is controlled by a control device. Finally, the selective switching is effected based upon a first measure representing a reflection coefficient measured at the transmitter section. In another embodiment, a method for transmitting and receiving electromagnetic waves is disclosed. The method includes receiving a measure representing a reflection coefficient and controlling a switching device to selectively switch an antenna structure between a plurality of antenna configuration states in response to the measure representing the reflection coefficient.

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